

Applicant(s): Daly, et al.  
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### CLAIMS

Following is a listing of claims. No amendments to the claims are being made in this paper.

1. A modular digital recording logger comprising:  
a housing;  
at least two audio circuits in said housing for converting analog voice signals to digital voice signals, each of said audio circuits including at least two terminals for receiving said analog voice signals, each of said terminals being capable of receiving said analog voice signals for recording a two-way conversation;  
a circuit in said housing for compressing said digital voice signals received from each of said audio circuits to provide compressed voice data;  
a first bus in said housing for providing communication between said audio circuits and said compressing circuit, said first bus enabling the addition or removal of circuits;  
a multiplexer circuit in said housing for providing communication between said compressing circuit and said first bus, wherein said multiplexer circuit multiplexes voice signals exchanged between said compressing circuit and said audio circuits on said first bus;  
a host computer for controlling the logger; and  
a digital audio tape (DAT) drive for storing said compressed voice data.
2. The modular digital recording logger of claim 1, further including a clock in communication with said computer.
3. The modular digital recording logger of claim 1 further comprising a speaker in communication with at least one of the audio circuits.

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4. The modular digital recording logger of claim 1 further comprising a hard disk drive in said housing for storing said compressed voice data.

5. The modular digital recording logger of claim 4 further comprising a second bus in said housing for connecting said computer to said hard disk drive and said DAT drive.

6. The modular digital recording logger of claim 1, wherein said first bus is a time division multiplexing (TDM) bus and said multiplexer circuit is a time division multiplexer circuit.

7. The modular digital recording logger of claim 5, wherein said second bus is a small computer system interface (SCSI) bus and the logger further comprises a SCSI adapter for connecting said computer to said SCSI bus.

8. The modular digital recording logger of claim 1, wherein said compressing circuit is a processor.

9. The modular digital recording logger of claim 8, further comprising an ISA bus for providing communication between said computer and said processor.

10. The modular digital recording logger of claim 7, further including a random access memory (RAM) for storing said compressed voice data before it is transmitted to the SCSI adapter.

11. A network of modular digital recording loggers comprising:  
at least two digital recording loggers for logging voice signals, each of said recording loggers comprising:  
a housing,  
a first circuit in said housing for converting analog voice signals to digital voice signals, said circuit including at least two terminals for receiving

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said analog voice signals, and wherein each of said terminals is capable of receiving said analog voice signals for recording a two-way conversation, a second circuit in said housing for compressing said digital voice signals received from the first circuit to provide compressed voice data, a digital audio tape (DAT) drive for storing said compressed voice data, a hard disk drive in said housing for storing said compressed voice data, a first computer in said housing for operating said DAT drive and/or said hard disk drive to store compressed voice data received from said second circuit and retrieve stored compressed voice data, and a second computer for processing compressed voice data retrieved from said recording loggers; and a bus connecting each of said recording loggers to said second computer.

12. The network of claim 11 further comprising a clock in communication with said first computer.

13. The network of claim 11, wherein said bus is a local area network (LAN) bus.

14. The network of claim 13, wherein said second computer and each of said recording loggers further include a LAN adapter for providing connection to said LAN bus.

15. The network of claim 11 further comprising a time division multiplexed (TDM) bus that provides for communication between the first and second circuits in each digital recording logger.

16. The network of claim 11 further comprising a small computer system interface (SCSI) bus for connecting said first computer to said hard drive and said DAT drive and a SCSI adapter for connecting said first computer to said SCSI bus in each digital recording logger.

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17. The network of claim 16 further comprising a random access memory (RAM) for storing said compressed voice data before transmission to the SCSI bus in each digital recording logger.

18. The network of claim 11, wherein said second circuit in each digital recording logger is a processor.

19. The network of claim 18 further comprising an ISA bus for providing communication between said first computer and said processor in each digital recording logger.

20. The network of claim 11, wherein said second computer is a workstation.

21. The network of claim 11 further comprising a speaker in communication with said second computer for reproducing analog voice signals from the compressed voice data.

22. A method of manufacturing a modular digital recording logger, comprising the steps of:

selecting a number of circuits for converting analog voice signals to digital voice signals, each of said circuits including at least two terminals for receiving analog voice signals, and wherein each of said terminals is capable of receiving said analog voice signals for recording a two-way conversation;  
installing said selected number of said circuits in a housing;  
installing a compressing circuit in said housing for compressing said digital voice signals received from each of said circuits to provide compressed voice data;  
installing a first bus in said housing for providing communication between said circuits and said compressing circuit;  
installing a multiplexer circuit in said housing for providing communication between said compressing circuit and said first bus, wherein said multiplexer circuit multiplexes voice signals between said compressing circuit and said circuits; and

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installing a digital audio tape (DAT) drive in said housing for storing said compressed voice data.

23. The method of claim 22 further comprising the steps of installing a hard disk drive in said housing for storing said compressed voice data.

24. A method of networking a plurality of digital recording loggers comprising the step of:

selecting a number of modular digital recording loggers for logging voice signals, each of said recording loggers comprising:

a housing,

a converting circuit for converting analog voice signals to and from digital voice signals, said circuit including a plurality of terminals for receiving said analog voice signals, and wherein each of said terminals is capable of receiving said analog voice signals for recording a two-way conversation,

a compressing circuit for compressing said digital voice signals received from the converting circuit to provide compressed voice data,

a digital audio tape (DAT) drive for storing said compressed voice data,

a hard disk drive for storing said compressed voice data,

a first computer for operating said DAT drive and/or said hard disk drive to store and retrieve said compressed voice data, and

a bus connecting said computer to said hard disk drive and said DAT drive;

installing said selected number of said recording loggers; and

connecting the installed loggers via a local area network (LAN) bus.

25. (Canceled)

26. (Canceled)

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27. The modular digital logger of claim 4 further comprising a host adapter for activating the hard disk drive to retrieve select voice signals stored thereon.

28. The modular digital logger of claim 4 further comprising means for activating the hard disk drive to retrieve select voice signals stored thereon while signals are being stored using said DAT drive.

29. The modular digital logger of claim 3, wherein at least one audio circuit is capable of converting digital audio signals to analog audio signals for playback using said speaker.

30. (Canceled)

31. The network of modular digital recording loggers of claim 11, wherein at least one logger has an audio circuit that is capable of converting digital audio signals to analog audio signals for playback.

32. The network of modular digital recording loggers of claim 11, wherein at least one digital recording logger is capable of recording voice data while retrieving select previously stored voice data.

33. (Canceled)

34. The method of networking of claim 24 further comprising the step of connecting a workstation capable of retrieving compressed voice data stored in an installed recording logger.

35. The method of networking of claim 34 further comprising the step of playing back voice data retrieved from an installed recording logger.

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36. The method of networking of claim 34, wherein the step of connecting is performed using a LAN bus.
37. A modular digital recording logger, comprising:  
a base;  
one or more circuits on said base for monitoring a plurality of audio sources and receiving signals therefrom, at least one monitoring circuit being capable of receiving analog signals for recording a two-way conversation and converting analog audio signals to digital audio signals;  
at least one application circuit on said base for compressing digital audio signals received from said one or more monitoring circuits to provide compressed audio data;  
a first bus on said base for providing time division multiplexed communication of digital audio signals from the plurality of audio sources between said one or more monitoring circuits and said at least one application circuit, said time division multiplexed communication on the first bus enabling increase or decrease in the number of circuits;  
a host computer for controlling the operation of the logger; and  
digital storage means for storing said compressed audio data.
38. The modular digital recording logger of claim 37 further comprising a multiplexer circuit that multiplexes audio signals exchanged between said at least one application circuit and said one or more monitoring circuits on said first bus.
39. The modular digital recording logger of claim 38, wherein said multiplexer circuit is a time division multiplexing (TDM) circuit.
40. The modular digital recording logger of claim 37, wherein at least one monitoring circuit is capable of converting digital audio signals to analog audio signals and the logger

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further comprises a speaker for playback of said analog audio signals.

41. The modular digital recording logger of claim 37, wherein said digital storage means is a random access storage device.

42. The modular digital recording logger of claim 41, wherein said random access storage device is a hard disk.

43. The modular digital logger of claim 42 further comprising a host adapter for activating the hard disk to retrieve select audio signals stored thereon.

44. The modular digital recording logger of claim 37 further comprising a small computer system interface (SCSI) bus for connecting said computer to the digital storage means and a SCSI adapter for connecting said computer to said SCSI bus.

45. The modular digital recording logger of claim 37, wherein at least one application circuit is a processor.

46. The modular digital recording logger of claim 45 further comprising an ISA bus for providing communication between the computer and said processor.

47. The modular digital recording logger of claim 37 further comprising a random access memory (RAM) for storing said compressed voice data before it is transmitted to the digital storage means.

48. The modular digital recording logger of claim 37, wherein said storage means comprises a digital audio tape (DAT) drive.

49. The modular digital recording logger of claim 38 further comprising a random access memory (RAM) for storing said compressed voice data before it is transmitted to the



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digital storage means.

50. A network of modular digital recording loggers comprising:  
at least two digital recording loggers for logging audio signals, each of said recording loggers comprising:
- a base;
  - one or more circuits on said base for monitoring a plurality of audio sources and receiving signals therefrom, at least one monitoring circuit being capable of receiving analog signals for recording a two-way conversation and converting analog audio signals to digital audio signals;
  - at least one application circuit on said base for compressing digital audio signals received from said one or more monitoring circuits to provide compressed audio data;
  - a first computer on said base for controlling the operation of the logger; storage means for storing said compressed voice data;
  - a workstation capable of processing audio data; and
  - a bus connecting each of said recording loggers to said workstation.
51. The network of claim 50, wherein said bus is a local area network (LAN) bus.
52. The network of claim 51, wherein said workstation and each of said recording loggers further comprises a LAN adapter for providing connection to said LAN bus.
53. The network of claim 50, wherein said storage means comprises a random access storage device.
54. The network of claim 53, wherein said random access storage device is a hard disk drive.

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55. The network of claim 50, wherein said storage means comprises a digital audio tape (DAT) drive.

56. The network of claim 54 further comprising a host adapter for activating the hard disk drive to retrieve select audio signals stored thereon.

57. The network of claim 55, wherein audio signals selected for retrieval on a first digital logger are communicated over said bus and played back on a second digital logger.